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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,441	11/03/2003	Se Kit Yuen	Q77986	1528
23373 7590 05/01/2007 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			EXAMINER CONLEY, SEAN EVERETT	
			ART UNIT 1744	PAPER NUMBER
			MAIL DATE 05/01/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/698,441	<b>Applicant(s)</b> YUEN, SE KIT	
	<b>Examiner</b> Sean E. Conley	<b>Art Unit</b> 1744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 3-5, 7 and 9-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5, 7 and 9-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11/3/2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

Applicant's submission filed on March 8, 2007 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen et al. (GB 2301179 A) in view of Taylor et al. (U.S. Patent No. 6,911,186 B2) and Palestro et al. (U.S. Patent No. 6,264,888 B1).

Regarding claim 9, Yuen et al. discloses a portable photoelectric air cleaner comprising: a main body (cover (24) with base (22)) of pyramidal shape, the main body having an interior portion, the interior portion including an extractor fan (36) disposed at an angle to the flat base and orthogonal to the direction of air flow at the air outlet (located at air outlet grill (14)), a transformer (44), a circuit board (42), an ultraviolet ray tube (32) which includes ultraviolet light in the UVA,

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UVB, and UVC range and the tube (32) being located within the interior portion of the air cleaner and proximate to the air outlet, a cathode high voltage discharge fiber thread (40) fixed to a front face of the air outlet exhaust grid (14), and an air collector (filter holder (26)) formed within the interior portion between the air inlet (located at filter cover (30)) and the radiation tube (32). The extractor fan (36) is disposed between the ultraviolet radiation tube (32) and the air outlet portion (grid (14)). The air collector is comprised of a space which is defined by an air collecting wall (wall containing air holes in filter holder (26)) and a blocking wall (sidewalls of filter holder (26)) (see figure 2; page 4, line 8 to page 5, line 27).

However, Yuen et al. does not disclose a portable photoelectric air cleaner comprising a semicircular body having front, top and rear portions forming a continuous curve and defining a curve front face with an air outlet portion and a curved rear face with an air inlet portion or an air collector as recited in applicant's claim 9.

Taylor et al. discloses an air purification device for removing particles from an air by subjecting an airflow to ultraviolet radiation from a germicidal lamp within the device. The device comprises a housing (210) that includes a semicircular body having front (260), top (217), and rear portions (see air intake (250)) forming a continuous curve (oval shape of the device as shown in figure 3A) and defining a curved front face with an air outlet portion (outlet (260)) and a curved rear face with an air inlet portion (air intake (250)) (see figures 3A-4; abstract; col. 7, line 50 – col. 8, line 25).

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Therefore, it would have been an obvious matter of design choice to make the device semi-circular in shape as taught by Taylor et al. since the court has held that a claimed shape is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration of the claimed shape was significant (see MPEP 2144.04, Section IV).

Palestro et al. discloses an ultraviolet germicidal apparatus for destroying airborne pathogenic bacteria. The apparatus (10) comprises a housing (40) having an air intake duct (42) and an air discharge duct (44), a blower (120) and a set of ultraviolet lights (150) located in a sterilization chamber (180) within the housing (40) (see figures 1 and 2; see col. 7, lines 32-57). The sterilization chamber (180) is baffled in the upstream side by an intake baffle (182) and on the downstream side by a pair of exhaust baffles (184 and 187) extending from the side portions of the housing (40). These baffles function as blocking walls and air collecting walls to prevent ultraviolet light from leaking from the sterilization chamber (180) out of the intake duct (42) or the discharge duct (44) and into the environment where it could damage the skin and eyes of people. The baffles (182, 184, and 187) also improve the circulation of the air over the ultraviolet bulbs by directing the air flow across the bulbs (see col. 8, lines 38-65; see col. 9, lines 19-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the invention of Yuen et al. and place the ultraviolet lamp in the middle of the device and include air collecting walls

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(184, 187) extending from side portions of the body and a blocking wall (182) spaced apart and upstream from the air collecting walls with an air inlet defined by the space between the blocking wall and the air collecting walls as taught by Palestro et al. in order to direct and concentrate the air flow towards the ultraviolet lamp inside the device and also prevent a users eyes from being exposed to harmful ultraviolet radiation that would be emitted through the inlet or outlet of the device.

Regarding claim 10, Yuen et al. discloses that the fan extractor fan (36) is disposed at an angle to the flat base (22) and orthogonal to the direction of air flow at the air outlet (located at air outlet grill (14)) (see figure 2). Yuen et al. also discloses that the radiation tube (32) is disposed at an angle to the flat base (22) and shown to be orthogonal to the direction of air flow at the air outlet portion (grill (14)) (see figure 2).

Regarding claim 11, Yuen et al. discloses that the air inlet (located at filter cover (30)) is disposed on the rear end of the main body and has an air input gridiron (filter cover (30)) provided with a dustproof gridiron (filter holder (26)) which has partitions, and a dust screen (foam filter (28)) and a dust cover for the air inlet (see figure 2; page 4, lines 17-25).

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen et al. in view of Taylor et al. and Palestro et al. as applied to claim 9 above, and further in view of Cartellone (U.S. Patent No. 5,837,020) and Bullard (U.S. Patent No. 2,085,249).

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Yuen et al. in view of Taylor et al. and Palestro et al. disclose the claimed invention except for a portable device that includes a movable handle and a movable gallus fixed to the body of the device by a buckle.

Cartellone discloses a portable room air cleaner (10) that includes a handle (154) that is mounted to a top section (106) of the device so that the user can conveniently move the air cleaner (10) to various locations within a room or building. Handle (154) is mounted to top section (106) by a handle mount (156) which allows handle (154) to pivot on top section (106) such that the handle may be pivoted downwardly into the slot to maintain the handle in a secure position (see figure 1; col. 12, lines 9-16). This reference has been relied upon to teach that it is well known to use a movable handle on a portable air treatment device.

Bullard discloses a portable air respirator apparatus for supplying conditioned air to a user comprising a breathing chamber (3) that is supported on the body of the wearer by a harness preferably comprising a waste encircling strap (6) and a pair of shoulder straps (7). The shoulder straps (7) are detachably connected to the breathing chamber (3) of the air purification apparatus by suitable buckles (8) (see figure; col1, line 54 to col. 2, line 12). This reference has been relied upon to teach that it is well to use a strap connected by a buckle on a portable air treatment device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the invention of Yuen et al. and include a movable handle and a movable strap connected to the device by a buckle a taught by Cartellone and Bullard in order to support the device on the

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body of the user (see col. 1, line 55 of Bullard) and also provide a handle for moving the device from various locations in a room or building (see col. 12, lines 9-11 of Cartellone).

5. Claims 3, 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yuen et al. in view of Taylor et al. and Palestro et al. as applied to claim 9 above, and further in view of Sham et al. (U.S. Patent No. 6,464,760 B1).

Yuen et al. in view of Taylor et al. and Palestro et al. disclose the claimed invention except for the use of batteries to power the air purification device.

Regarding claim 3, Yuen et al. discloses a circuit board located on a supporting frame in the housing. The circuit board comprises a transformer (44), power source lines, power supply generator (see figures 4-5), and an electronic switcher. However, Yuen et al. fails to teach batteries used to power the device instead of a conventional AC power source such as power from a power cord (46).

Sham et al. discloses an apparatus for purifying air to by exposing an air stream from a surrounding area to ultraviolet radiation. Sham et al. further discloses in the preferred embodiment of the invention, a free standing, self-contained unit powered from a conventional AC source, although the unit could be operated from storage batteries (DC source) rather than an AC source; having a housing with a removable front cover, an inlet opening and an outlet opening, filter media to filter an air stream which flows from the inlet opening to the outlet



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opening; an ultraviolet light source to provide germicidal radiation to the air stream and to a surface of a filter medium, and a motorized fan for maintaining a flow of air through the housing from the inlet opening to the outlet opening. The unit is compact and attractive, and has a high efficiency of air purification and sanitization using a relatively short airflow (see col. 1, lines 34-51). This reference has been relied upon to teach that it is well known to substitute a conventional AC source of power with a DC power source such as storage batteries in order to increase the portability of the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the invention of Yuen et al. and replace the conventional AC power source (power cord (46)) with a storage battery (DC power source) as taught by Sham et al. in order to increase the portability of the device.

Regarding claims 5 and 7, Sham et al. discloses an apparatus for purifying air to by exposing an air stream from a surrounding area to ultraviolet radiation. Sham et al. further discloses in the preferred embodiment of the invention, a free standing, self-contained unit powered from a conventional AC source (although the unit could be operated from storage batteries (DC source) rather than an AC source); having a housing with a removable front cover, an inlet opening and an outlet opening, filter media to filter an air stream which flows from the inlet opening to the outlet opening; an ultraviolet light source to provide germicidal radiation to the air stream and to a surface of a filter medium, and a motorized fan for maintaining a flow of air through the housing from the inlet opening to the

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outlet opening. The unit is compact and attractive, and has a high efficiency of air purification and sanitization using a relatively short airflow (see col. 1, lines 34-51). This reference has been relied upon to teach that it is well known to substitute a conventional AC source of power with a DC power source such as storage batteries in order to increase the portability of the device.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to further modify the invention of Yuen et al. and replace the conventional AC power source (power cord (46)) with a storage battery (DC power source) as taught by Sham et al. in order to make the device portable. Furthermore, it would have been obvious that the storage batteries would be attached to a DC input of the device since it is known that the batteries are a DC power source while the components of the air purification run on AC power and therefore, the batteries would have to be attached to a DC input of a voltage converter on the circuit board located within the housing of the device in order to convert the voltage for use by the fan, ultraviolet radiation source, and fiber discharge line.

### ***Response to Arguments***

6. Applicant's remarks, see page 5, filed March 8, 2007, with respect to the claim rejections under 35 U.S.C. 112, second paragraph have been fully considered and are persuasive. The rejection of the claims under 35 U.S.C. 112,

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second paragraph have been withdrawn in response to the amendment of claim 9 which corrects the lack of antecedent basis cited in the previous office action.

7. Applicant's arguments, see page 6, filed March 8, 2007, with respect to the rejection of claims 9-11, 3, 5, and 7 under 35 U.S.C. 103(a) have been considered but are moot in view of the new ground(s) of rejection.

The applicant argues that the prior art of record fails to disclose an air collector as recited in amended claim 9. The newly cited patent to Palestro et al. (U.S. Patent No. 6,264,888 B1) has been relied upon in this office action to teach the air collector as claimed by the applicant (see above rejection of independent claim 9). The previously cited patent to Yuen et al. has again been relied upon in the above rejections to teach the same features as indicated in the previous office action and the prior art reference of Taylor et al. has been relied upon in the above rejections to only teach the shape of a portable air treatment device.

8. Applicant's arguments, see pages 9-10, filed March 8, 2007, with respect to the rejection of claim 4 under 35 U.S.C. 103(a) has been fully considered but they are not persuasive.

The applicant argues that the movable handle and movable gallus taught by Cartellone and Bullard are not relevant to a semicircular body and that the semicircular structure creates unique problems that may be solved only by the structure defined in the rejected claim. The examiner respectfully disagrees.

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First, the applicant has not disclosed the "unique problems" solved by the use of the movable handle and movable gallus in combination with the semicircular structure. Furthermore, these references were specifically relied upon to teach that it is well known in the art to use a movable handle and a movable gallus to enhance portability of a variety of different shaped air cleaning devices. Therefore, it would have been obvious to one of ordinary skill in the art to use a movable handle and movable gallus with a variety of different shaped air cleaner devices including semicircular devices in order to facilitate portability of these devices.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sean E. Conley whose telephone number is 571-272-8414. The examiner can normally be reached on M-F 8:30-5:00.

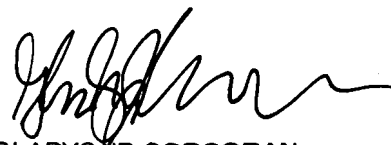
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gladys Corcoran can be reached on 571-272-1214. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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April 25, 2007



GLADYS JP CORCORAN  
SUPERVISORY PATENT EXAMINER